

Date: Sun, 19 Sep 93 04:30:16 PDT
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V93 #52
To: Ham-Ant

Ham-Ant Digest Sun, 19 Sep 93 Volume 93 : Issue 52

Today's Topics:

 Calculating Capacitance
 Horizontal Loops (3 msgs)
 Kill the Rubber Duck!
 mininec3 manual required (2 msgs)
 New owner report on Cushcraft R-5
 Parallel Dipole comments and questions

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Sat, 18 Sep 1993 22:49:32 GMT
From: library.ucla.edu!europa.eng.gtefsd.com!howland.reston.ans.net!
newsserver.jvnc.net!newsserver.egr.uri.edu!orca!swamik@network.ucsd.edu
Subject: Calculating Capacitance
To: ham-ant@ucsd.edu

I need to know how to calculate the capacitive reactance (at a certain f of
course) of a piece of wire that is perpendicular to a gnd plane. Someone told me
to look in the 1956 edition of the CRC handbook of Physics. Problem: I have
no way of getting a copy of the 1956 edition of the CRC handbook. Does
anyone know how to do this? Pse reply to my email addr.

tnx
73 es 72 de kb1amb/ae
swami@orca.ele.uri.edu

Date: Thu, 16 Sep 1993 17:11:38 GMT
From: usc!sdd.hp.com!hpscit.sc.hp.com!hplextra!hpfcso!hplvec!van@network.ucsd.edu
Subject: Horizontal Loops
To: ham-ant@ucsd.edu

MUSCHINSKE%39A.DEcnet@sunman.chinalake.navy.mil writes:

Does anyone have any experience with full wave horizontal loop antennas?
I am interested in data, anecdotes, stories, tall tales, etc., on these
antennas. I am ESPECIALLY interested in anyone who has used a 160m
full wave horizontal loop.

I used to have a 40m fullwave horizontal loop mounted on my home. Fed with
coax from a MFJ tuner. Worked well. Tuned up on 40, 20, 15, 10. I worked
all over the world on 100W. What more can I say, except that Its in the
shed with the radio after the shack was converted to a bedroom, sigh!

Van Walther
NW0S, x/KE0IL, x/NOGWA

Date: 18 Sep 93 20:09:20 GMT
From: news-mail-gateway@ucsd.edu
Subject: Horizontal Loops
To: ham-ant@ucsd.edu

Hello,

One of the reasons I chose the horizontal loop is that I live in a
desert. Ground is poor and very hard to get here. For a good ground
I would have to run a LOT of wire! My setup is 40 feet off the soil here,
but its anybody's guess where the virtual ground is (Guesses anyone?:-).
I know the space shuttle radar was able to look through some meters of
dry sand, but they were using a higher frequency. I'm not sure what
the effect is at HF.

Performance is OK on transmit, but superb on receive. The only antenna
I have that outperforms it is the 5 element 10m monobander. I have not
had the opportunity to compare it to a vertical because I have never
put one up (see grounding reasons above). With 5 acres of desert to
work with, no neighbors to speak of, I have a lot of latitude to play
around. {::-)

73, Erich KA6AMD @ WA6YBN.#SOCA.CA.USA.NA
Internet: muschinske%39a.decnet@scfb.chinalake.navy.mil

Date: Sun, 19 Sep 1993 03:19:03 GMT
From: library.ucla.edu!agate!tcsi.tcs.com!iat.holonet.net!
rohrwerk@network.ucsd.edu
Subject: Horizontal Loops
To: ham-ant@ucsd.edu

van@hplvec.LVLD.HP.COM (Van Walther) writes:

>MUSCHINSKE%39A.DEcnet@sunman.chinalake.navy.mil writes:

> Does anyone have any experience with full wave horizontal loop antennas?
> I am interested in data, anecdotes, stories, tall tales, etc., on these
> antennas. I am ESPECIALLY interested in anyone who has used a 160m
> full wave horizontal loop.

Have had great success with an 80 meter horizontal loop -- actually
triangular, 40 feet high at apex, about 10 feet at base. Has worked
satisfactorily on 160 for casual contacts when fed as random wire.
Fed with balanced line and a balanced tuner.

John K0JD

Date: Fri, 17 Sep 1993 14:22:29 GMT
From: das.wang.com!wang!dbushong@uunet.uu.net
Subject: Kill the Rubber Duck!
To: ham-ant@ucsd.edu

ritterbus001@wctsub.ctstateu.edu writes:

>And now, for hopefully my last stupid newbie question.

>I have a RS HTX202, and several people have suggested that I get rid
>of the rubber duck, and get a "real" antenna. One suggested (jokingly,
>I think) that even a piece of coat hangar would be better, which brings
>me to my questions:

>1) Would any telescoping antenna, extended to feet = 468 / 144 Mhz be an
> end-fed halfwave, and work correctly without further ado?

>2) Would the same antenna, shortened to feet = 234 / 144 Mhz work as
> a quarterwave? Is a groundplane required? What is a good idea
> for a groundplane for 2m?

>Or am I fooling myself, and should I just go buy an antenna designed
>for 2m work (but it's so much more satisfying to roll my own :-)

I'll answer them in reverse order:

It *is* much more satisfying to roll your own, and I'd encourage you
to keep thinking that way. If you aren't happy with the result, there
is always the option to buy something, after all.

A quarter-wave antenna (roughly 19.5 inches at 2 meters) works with a
suitable ground plane. The HTX-202 is not a suitable ground plane,
and is a little better if your hand is holding it. The rubber duck is
an electrical quarter-wave, but the wire is coiled up instead of
straight, so it's less of a 'skyhook' than a fully-extended
quarter-wave, and works more poorly than a quarter-wave.

An end-fed half wave requires no such 'ground plane' since it is
voltage fed. That is how on-glass (auto) antennas can get away with
that. In fact, the two plates on either side of the glass act as the
plates in the series matching capacitor. This capacitor (and a tapped
inductor also) are necessary because the feedpoint impedance is quite
high, so you just can't plug it into a BNC connector without some kind
of matching network. But that's all it takes, and a half-wave 2-meter
antenna is worlds better than the duckie. It's even better than a
(longer) 5/8, since that needs a ground, which isn't available from a
hand-held such as the HTX-202.

Remember that when you are comparing antennas. Usually the
comparisons are made using a perfect ground, which is not always
available in practical use.

Dave's antenna rating scale

poor-----usable-----fair-----good-----best

stubby	rubber	1/4 wave	1/2 wave	mobile	base
duckie	duck	telescop.	telesc.	5/8	5/8
		on HT	on HT	drilled	on tower

73,
Dave

--

Dave Bushong, Wang Laboratories, Inc. Amateur Radio Callsign KZ10
Project Leader, Recognition products kz1o@n0ary.#noca.ca.na

Internet: dbushong@wang.com

ARRL VE // W5YI VE

Date: Fri, 17 Sep 1993 13:00:09 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!doc.ic.ac.uk!uknet!bailgate!sn4715!
andy_w@network.ucsd.edu
Subject: mininec3 manual required
To: ham-ant@ucsd.edu

Does anyone know where I can get a copy of the MININEC3 antenna program manual?
I have managed to get a copy of the software but there is no documentation
with it. If anyone could e-mail it to me it would be appreciated, as I don't
have ftp privileges.

Thanks Andy Wright G4OJY
e-mail andy_w@oldham.gpsemi.com

Date: Fri, 17 Sep 1993 18:20:02 GMT
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!usc!sdd.hp.com!hpscit.sc.hp.com!
news.dtc.hp.com!col.hp.com!fc.hp.com!goris@network.ucsd.edu
Subject: mininec3 manual required
To: ham-ant@ucsd.edu

In addition to Roy's, post, there is an 800 number you can call to order
the Mininec Manual. NTIS takes VISA. I just ordered the manual a little over
a week ago and it arrived yesterday. There's lots of graphs in here, so
you can't just type in the manual and distribute it FTP.

NTIS 1-800-553-6847
It costs \$27.00 + \$3.00 for shipping
Document number AD-A181 682

Date: 16 Sep 1993 18:31:52 GMT
From: olivea!korie!newscast.West.Sun.COM!news2me.EBay.Sun.COM!exodus.Eng.Sun.COM!
appserv.Eng.Sun.COM!sunspot!myers@uunet.uu.net
Subject: New owner report on Cushcraft R-5
To: ham-ant@ucsd.edu

I just bought a Cushcraft R-5. The R-5 and R-7 antennas were very attractive
since they require no radials and are rather inconspicuous, an advantage
in my neighborhood with CC+Rs prohibiting antennas.

Cushcraft was attractive to me since I've used several of their antennas

with excellent results. The AR-2, AR-10 and ARX-2B Ringos have all worked exactly as advertised with no trouble for me.

I selected the R-5 over the R-7 since the R-7 is specified to have less coverage of the 20m band, the 40m coverage is very limited, and it isn't worth \$100 to me for 30m coverage.

The antenna was complete when I received it. It took about one hour to assemble the antenna. The instructions were clear to me.

I adjusted the antenna to the specified dimensions in the instructions, taking extra care to make sure my measurements were accurate.

I erected the antenna on a 10 foot mast section bolted about 5 feet off the ground to a cinder block wall; the base of the antenna is about 15 feet off the ground. I hope to raise that somewhat in the future. The antenna is fed by about 70 feet of RG-8 coax.

SWR checks on each of the 5 covered bands (10m, 12m, 15m, 17m, 20m) were essentially identical to the specified charts in the manual. SWR minimums occurred exactly where the chart indicates.

My first QSO, under very poor 20m conditions, was with VK5QQ on 20m CW.

Overall, the antenna works exactly as advertised and I spent no time adjusting the antenna at all.

* Dana H. Myers KK6JQ, DoD 466 | Views expressed here are
*
* (310) 348-6043 | mine and do not necessarily *
* Myers@Cypress.West.Sun.Com | reflect those of my employer
*
* This Extra supports the abolition of the 13 and 20 WPM tests *

Date: Thu, 16 Sep 1993 17:57:58 GMT
From: usc!sdd.hp.com!hpscit.sc.hp.com!hplextra!hpfcso!hplvec!
scott@network.ucsd.edu
Subject: Parallel Dipole comments and questions
To: ham-ant@ucsd.edu

I'm in the process of putting up a parallel dipole antenna for 80,40,20,15 and 10 meters. First of all, I've decided that this task is not for the faint of heart. Getting this puppy up in the trees without making a tangled mess was *not* easy. A week after getting it up, a major windstorm managed to flip the wires on one side back into a

tangled mess. (The good news was that my pulley/counterweight system worked like a champ despite a storm that brought entire trees down :-) The subsequent untangling was definitely not fun. With my wife's assistance I got things sorted out, but it's getting a bit hard on my marriage!

Comments for those considering such an antenna. First, the kit I bought does not provide nearly enough spacers. It had one to use near the feedpoint for primary separation and one each at the ends of the 10, 20, and 40 meter wires. Given that only the 40 and 80 meter wires are under tension, that's simply not enough! Use more!! Second, I would add some sort of weight, regularly spaced, to the bottom wire to help resist flipping. Third, I might just settle for a G5RV :-)

Now the question. I'm down to trimming or adding to the wires. My analyzer shows that the 80 meter wire needs to be shortened, and all of the other wires lengthened. This is a bit of a surprise, since I initially cut all of the wires long. I assume I'm seeing some interaction between the wires so the question is, in what order should I begin to tune this antenna? I'm leaning towards starting from 80 and working up in freq. since I assume the longer wire has the most influence.

Comments or suggestions would be appreciated. Be gentle with me, I'm still trying to learn.

Scott Turner N0VRF scott@hpsla.LVLD.HP.COM
HP VXI Systems Operation

Date: (null)
From: (null)
I don't have the address to order ELNEC from here at work, so you'll have to check a back issue of QST. Sorry.

-Andy Goris
AA0CM
goris@fc.hp.com

=====
: Article 833 of rec.radio.amateur.antenna:
: >andy_w@sn4715.oldham.gpsemi.com (Andy Wright):

: >Does anyone know where I can get a copy of the MININEC3 antenna program manual?
: >I have managed to get a copy of the software but there is no documentation
: >with it. If anyone could e-mail it to me it would be appreciated, as I don't
: >have ftp privileges.

: >Thanks Andy Wright G40JY
: > e-mail andy_w@oldham.gpsemi.com

: The MININEC manual is

: The New MININEC (Version 3): A Mini-Numerical Electromagnetic Code,
: by J.C. Logan and J.W. Rockway, Naval Ocean Systems Center, San Diego,
: CA (NOSC Technical Document TD 938)

: It can be ordered as NTIS document number ADA181682 from

: National Technical Information Service
: U.S. Department of Commerce
: 5285 Port Royal Road
: Springfield, VA 22161
: (703) 487-4650

: It's a highly technical manual, consisting mostly of an explanation of
: the math and comparisons of MININEC to published antenna measurements.
: A good article by R.P. Haviland on using MININEC was published in the first
: issue of Communications Quarterly. If you or your library doesn't have it,
: you may be able to get a copy from CQ Communications in Hicksville, NY,
: the publisher. Sorry I don't have the phone number here at work.

: Roy Lewallen, W7EL
: royle@tekig6.pen.tek.com

End of Ham-Ant Digest V93 #52
